

Appl. No. 09/966,414  
Appeal Brief in Response  
to final Office action of 7 March 2006

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**IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE**

Appl. No. : 09/966,414  
Applicant(s) : GUTTA et al.  
Filed : 28 Sep 2001  
TC/A.U. : 2611  
Examiner : LONSBERRY, Hunter B.  
Atty. Docket : US-010451

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On: 26 June 2006

By: Title: **INDIVIDUAL RECOMMENDER DATABASE USING PROFILES OF OTHERS**

Mail Stop: **APPEAL BRIEF - PATENTS**  
Commissioner for Patents  
Alexandria, VA 22313-1450

**APPEAL UNDER 37 CFR 41.37**

Sir:

This is an appeal from the decision of the Examiner dated 7 March 2006,  
finally rejecting claims 1-6, 8-9, and 11 of the subject application.

This paper includes (each beginning on a separate sheet):

1. Appeal Brief, with appendices; and
2. Credit card authorization in the amount of \$500.

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## **APPEAL BRIEF**

### **I. REAL PARTY IN INTEREST**

The above-identified application is assigned, in its entirety, to Koninklijke Philips Electronics N. V.

### **II. RELATED APPEALS AND INTERFERENCES**

Appellant is not aware of any co-pending appeal or interference that will directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

### **III. STATUS OF CLAIMS**

Claims 7 and 10 are canceled.

Claims 1-6, 8-9, and 11 are pending in the application.

Claims 1-6, 8-9, and 11 stand rejected by the Examiner under 35 U.S.C. 102(b).

These rejected claims are the subject of this appeal.

### **IV. STATUS OF AMENDMENTS**

No amendments were filed subsequent to the final rejection in the Office Action dated 7 March 2006.

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#### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The invention addresses a method and system for creating a user profile, and using that profile to provide recommendations to the user. To avoid a user getting trapped in a rut because of repetitive selections of the same material, the user's profile is expanded based on the profile of other users, preferably users having similar or related interests, such as members of the same household (Applicants' abstract). The profiles are based on examples that are graded by each user, either explicitly (FIG. 6) or implicitly (FIG. 7). Other users' profiles may also be used to guide the selection of examples for the user to grade (page 21, lines 11-16). Preferably, the profile includes a generalized space that includes everything except negative-graded examples, and a specialized space that includes only positive-graded examples. The region between these spaces will likely include material that the user will like, the likelihood increasing as one approaches the specialized space (FIG. 1; page 18, line 1 – page 19, line 4). Preferably, the expansion does not decrease the frequency of recommendation of any data class, and is effected by a union of the specialized space of the users (page 19, lines 9-17).

As claimed in independent claim 1, the invention comprises a method that includes:

receiving feedback from a first user scoring examples falling into various data-classes (page 9, line 23 – page 10, line 9);

refining a first user profile associated with the first user responsively to the feedback (page 10, lines 9-18; page 18, lines 1-12); and

modifying (FIGs. 2A-2C) the first user profile responsively to data from a second user profile associated with a second user (page 19, lines 5-9) such that a frequency of recommendations of at least one data-class is increased without decreasing a frequency of recommendations of any other data-classes (page 19, lines 9-14), so that the first user profile is expanded in scope according to preferences stored in the second user profile (page 19, lines 14-20).

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As claimed in independent claim 5, the invention comprises a method that includes:

receiving feedback from a first user scoring examples falling into various data-classes (page 9, line 23 – page 10, line 9);

refining a first user profile associated with the first user responsively to the feedback (page 10, lines 9-18; page 18, lines 1-12);

selecting test-data for revising the first user profile responsively to data from at least a second user profile associated with a second user (page 21, lines 11-16); and

requesting feedback on the test-data from the first user (page 21, lines 15-16) and modifying the first user profile responsively to the feedback (page 22, lines 14-16);

wherein

selecting the test-data includes selecting primarily test-data for which the first user profile is insufficient for the recommender to determine whether the test-data would be favored or disfavored (page 12, lines 17-23; page 21, lines 16-18).

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As claimed in independent claim 9, the invention comprises a data-class recommender that includes (FIG. 5):

- a learning engine (440; page 14, lines 12-22);

- a user interface device operably coupled to the learning engine (410; page 23, lines 14-17);

- the learning engine being operably coupled to a data source containing descriptions of data selections (435; page 23, lines 21-23);

- the learning engine being programmed to:

- receive, through the user interface device, feedback from a first user evaluating the data selections (page 8-11);

- progressively generate a description of data selections that are favored and disfavored by the first user based on the feedback, thereby generating a first user profile (page 29, line 22 – page 31, line 2);

- generate recommendations of data selections for the first user responsively to the first user profile (page 31, line 2-8); and

- selectively generate recommendations of data selections for the first user responsively to the first user profile and at least a second user profile of a second user (page 12, lines 17-23; page 21, lines 16-18);

- wherein

- the learning engine is programmed such that the first user profile includes

- a narrow description defining target data selections (170 of FIG. 1) and

- a broad description defining non-target data selections (165),

- the recommendations being derived from a space of selections lying between the broad and narrow descriptions (page 18, line 22 – page 19, line 4).

#### **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-6, 8-9, and 11 stand rejected under 35 U.S.C. 102(b) over Payton (USP 5,790,935).

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## **VII. ARGUMENT**

### **Claims 1-6, 8-9, and 11 stand rejected under 35 U.S.C. 102(b) over Payton**

MPEP 2131 states:

"A claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The *identical invention* must be shown in as *complete detail* as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

**Summary of elements and limitations for which the Examiner has not shown a corresponding feature in the cited reference.**

Claims 1 includes modifying a first user profile based on data in a second user profile, with limitations related to this modification. The Office action has not shown where Payton teaches modifying a first user's profile based on data in a second user's profile, and also fails to show where Payton teaches the claimed limitations related to the modification of a user's profile.

Claim 5 includes selecting test-data for revising a first user profile based on data in a second user profile, and particularly, selecting test-data for material that the first user profile has insufficient data for determining whether the material would be favored or disfavored by the first user. The Office action has not shown where Payton teaches revising a first user profile based on data in a second user profile, and has not shown where Payton teaches selecting test-data based on the sufficiency of the first user profile for determining whether the user may favor or disfavor the material.

Claim 9 includes a learning engine that generates a first user profile that includes a narrow description defining target data selections (favored selections) and a broad description defining non-target data selections (everything except dis-favored selections). The Office action has not shown where Payton teaches a profile that includes a narrow description and a broad description.

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#### **Claims 1-4**

Claim 1, upon which claims 2-4 depend, claims a method that includes modifying a first user profile responsively to data from a second user profile associated with a second user such that a frequency of recommendations of at least one data-class is increased without decreasing a frequency of recommendations of any other data-classes, so that the first user profile is expanded in scope according to preferences stored in the second user profile.

Payton fails to teach modifying a first user profile based on a second user profile.

Payton fails to teach increasing the frequency of recommendation of a data-class without decreasing the frequency of another data-class.

Payton fails to teach expanding the scope of a first user profile according to preferences in the second user profile.

Payton teaches the use of a combination of multiple users' profiles to determine the recommendations provided to a user, but does not teach modifying the first user's profile based on the other user profiles.

The Office action fails to identify where Payton teaches modifying a user's profile based on another user's profile, and repeatedly refers to Payton's teaching of providing a recommendation based on other users' profiles. Citing the "modifying the first user profile responsively to data from a second user profile" element of claim 1, the Office action cites Payton's teaching of "recommendations from a second similar user", and fails to identify where these recommendations are used to modify the first user profile.

Payton's FIG. 7b clearly indicates the flow of Peyton's process. At 164, the user's profile is updated, based on explicit 160 and implicit 162 feedback. The updated user profile is then used to determine groups of similar users, at 166, and the profiles of these groups are used to predict the favorable/unfavorable ratings of the available material, at 168, and to produce the recommendation list, at 170. As is clearly evident in FIG. 7b, the user's profile is only updated at block 164, before the other, similar, users are determined, at 166. Although the recommendation is based

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on the multiple users, the individual user profiles are only affected by the individual user's actions, at 160 and 162.

Additionally, the Office action fails to identify where Payton teaches increasing the frequency of one data-class without decreasing the frequency of another. The Office action merely states: "the combined scores are used to recommend programming". Payton is silent with regard to how the combined scores are used to determine the recommended programming, and it is likely that, absent the applicants' teachings, if one or more of Payton's users do not prefer a given data-class, the likelihood of recommending that data-class will be reduced.

As noted above, Payton fails to teach modifying a user's profile based on another's profile, and thus Payton cannot be said to teach expanding the scope of a user's profile based on another's profile.

Because Payton fails to teach modifying a first user based on a second user profile, fails to teach increasing the frequency of recommendation of a data-class without decreasing the frequency of another data-class, and fails to teach expanding the scope of a first user profile according to preferences in the second user profile, as specifically claimed in claim 1, the applicants respectfully maintain that the rejection of claims 1-4 under 35 U.S.C. 102(b) over Payton is unfounded, per MPEP 2131.

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### **Claims 5-6 and 8**

Claim 5, upon which claims 6 and 8 depend, claims a method that includes selecting test-data for revising the first user profile responsively to data from at least a second user profile associated with a second user, requesting feedback on the test-data from the first user and modifying the first user profile responsively to the feedback, wherein selecting the test-data includes selecting primarily test-data for which the first user profile is insufficient for the recommender to determine whether the test-data would be favored or disfavored.

Payton fails to teach selecting test-data for revising a first user's profile based on data from a second user's profile.

Payton fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored.

The Office action asserts that Payton teaches selecting test-data for revising a first user's profile based on data from a second user's profile at column 8, line 50 through column 9, line 26, with the statement: "the combined scores are used to recommend programming". The applicants acknowledge that Payton teaches that combined scores are used to recommend programming, but respectfully maintain that providing program recommendations is not equivalent to selecting test-data for revising a user's profile, as specifically claimed in claim 5.

Assuming in argument, however, that recommending programming is identical to selecting test-data, the applicants respectfully note that Payton fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored. The Office action cites Payton's teaching that the weighting applied to a prediction is inversely proportional to the dissimilarity of the rating between users as corresponding to the applicants' claimed primary selection of data for which the first user's profile is insufficient. The applicants fail to see how the dissimilarity of ratings is related to the first user's profile being insufficient to determine whether the test-data would be favored or disfavored. Consider, for example, the case of a first user favoring an item

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and a second user disfavoring the item. In this case, the dissimilarity is high and the user's profile's sufficiency is high. Consider now the case of the second user also favoring the item. In this case, the dissimilarity is low, and the user's profile's sufficiency is still high. Consider now the case of both the first and second users' profile having insufficient favor/dis-favor information. In this case, the dissimilarity is low, and the user's profile's sufficiency is low. Finally, consider the case of the second user favoring the item. In this case, the dissimilarity is high, and the user's profile sufficiency is still low. The applicants respectfully maintain that the preceding analysis clearly indicates that Payton's dissimilarity-based selection is independent of whether a first user's profile is insufficient to determine whether the test-data would be favored or disfavored, as specifically claimed in claim 5.

Because Payton fails to teach selecting test-data for revising a first user's profile based on data from a second user's profile, and fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored, as specifically claimed in claim 5, the applicants respectfully maintain that the rejection of claims 5-6 and 8 under 35 U.S.C. 102(b) over Payton is unfounded, per MPEP 2131.

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### **Claims 9 and 11**

Claim 9, upon which claim 11 depends, claims a data-class recommender that includes a learning engine that selectively generates recommendations of data selections for the first user responsively to the first user profile and at least a second user profile of a second user; wherein the learning engine is programmed such that the first user profile includes a narrow description defining target data selections and a broad description defining non-target data selections.

Payton fails to teach a user profile that includes a narrow description defining target data selections and a broad description defining non-target data selections.

The Office action asserts that Payton's teachings of high ratings and lower ratings correspond to a narrow description and a broad description, respectively. The applicants respectfully maintain that high and low ratings are independent of narrow and broad descriptions. In the applicants' invention, for example, items in either the broad or narrow description category, or anywhere between, are generally rated high, because they are within the "version space" of favored items. That is, material in either the broad or narrow description categories will generally be rated higher than average. Material that is not contained in either the broad or narrow description categories will generally be rated lower than average.

Assuming in argument that a correspondence between ratings and descriptions may exist, the Office actions' asserted correspondence between a low rating and a broad description, and a correspondence between a high rating and a narrow description is easily contradicted by the example of a user who likes most items and only dislikes a few, such as a user who "likes everything except sports", or "everything but soaps". In these cases, a low rating corresponds to a narrow description (sports, soaps), and a high rating corresponds to a broad description (everything else).

Because Payton fails to teach a profile that includes a narrow description defining target data selections and a broad description defining non-target data selections, as specifically claimed in claim 9, the applicants respectfully maintain that

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the rejection of claims 9 and 11 under 35 U.S.C. 102(b) over Payton is unfounded, per MPEP 2131.

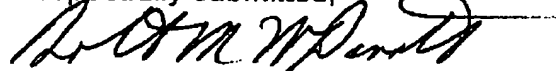
### CONCLUSIONS

Because Payton does not teach modifying a first user based on a second user profile, fails to teach increasing the frequency of recommendation of a data-class without decreasing the frequency of another data-class, and fails to teach expanding the scope of a first user profile according to preferences in the second user profile, as specifically claimed in claim 1, the applicants respectfully request that the Examiner's rejection of claims 1-4 under 35 U.S.C. 102(b) be reversed by the Board, and the claims be allowed to pass to issue.

Because Payton does not teach selecting test-data for revising a first user's profile based on data from a second user's profile, and fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored, as specifically claimed in claim 5, the applicants respectfully request that the Examiner's rejection of claims 5-6 and 8 under 35 U.S.C. 102(b) be reversed by the Board, and the claims be allowed to pass to issue.

Because Payton does not teach generating a profile that includes a narrow description defining target data selections and a broad description defining non-target data selections, as specifically claimed in claim 9, the applicants respectfully request that the Examiner's rejection of claims 9 and 11 under 35 U.S.C. 102(b) be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted,



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## CLAIMS APPENDIX

1. A method comprising:

receiving feedback from a first user scoring examples falling into various data-classes;

refining a first user profile associated with the first user responsively to the feedback; and

modifying the first user profile responsively to data from a second user profile associated with a second user such that a frequency of recommendations of at least one data-class is increased without decreasing a frequency of recommendations of any other data-classes, so that the first user profile is expanded in scope according to preferences stored in the second user profile.

2. The method of claim 1, wherein

the first user profile includes a specialized target description of favored data-classes, and

modifying the first user profile includes generalizing the specialized target description such that it encompasses at least one specialized target description of the second user profile.

3. The method of claim 2, wherein

modifying the first user profile includes substituting at least a union of specialized descriptions of the first user profile and the second user profile for the specialized description of the first user profile.

4. The method of claim 1, wherein

modifying the first user profile includes substituting at least a union of specialized descriptions of the first user profile and the second user profile for the specialized description of the first user profile.

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**5. A method comprising:**

receiving feedback from a first user scoring examples falling into various data-classes;

refining a first user profile associated with the first user responsively to the feedback;

selecting test-data for revising the first user profile responsively to data from at least a second user profile associated with a second user; and

requesting feedback on the test-data from the first user and modifying the first user profile responsively to the feedback;

wherein

selecting the test-data includes selecting primarily test-data for which the first user profile is insufficient for the recommender to determine whether the test-data would be favored or disfavored.

**6. The method of claim 5, wherein**

selecting the test-data includes selecting only test-data for which feedback incorporated in the first user profile increases a discriminating power of the first user profile.

**7 (Canceled)**

**8. The method of claim 5, wherein**

selecting the test-data includes filtering a universe of data choices through a specialized description of a concept space.

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9. A data-class recommender, comprising:

- a learning engine;
- a user interface device operably coupled to the learning engine;
- the learning engine being operably coupled to a data source containing descriptions of data selections;
- the learning engine being programmed to:
  - receive, through the user interface device, feedback from a first user evaluating the data selections;
  - progressively generate a description of data selections that are favored and disfavored by the first user based on the feedback, thereby generating a first user profile;
  - generate recommendations of data selections for the first user responsively to the first user profile; and
  - selectively generate recommendations of data selections for the first user responsively to the first user profile and at least a second user profile of a second user;
- wherein
  - the learning engine is programmed such that the first user profile includes
    - a narrow description defining target data selections and
    - a broad description defining non-target data selections,
  - the recommendations being derived from a space of selections lying between the broad and narrow descriptions.

10. (Canceled)

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11. The recommender of claim 9, wherein  
the learning engine is programmed to:  
compare a level of narrowness in the narrow description to a threshold  
such that the first user profile results in recommendations embracing a range of  
target data that is narrower than the threshold, and  
selectively generate recommendations of data selections for the first  
user responsively to the first user profile and at least a second user profile  
responsively to a result of comparing the level with the threshold.

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### **EVIDENCE APPENDIX**

No evidence has been submitted that is relied upon by the appellant in this appeal.

### **RELATED PROCEEDINGS APPENDIX**

Appellant is not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have any bearing on the Board's decision in the pending appeal.

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